プログラミング基礎　第４回　演習

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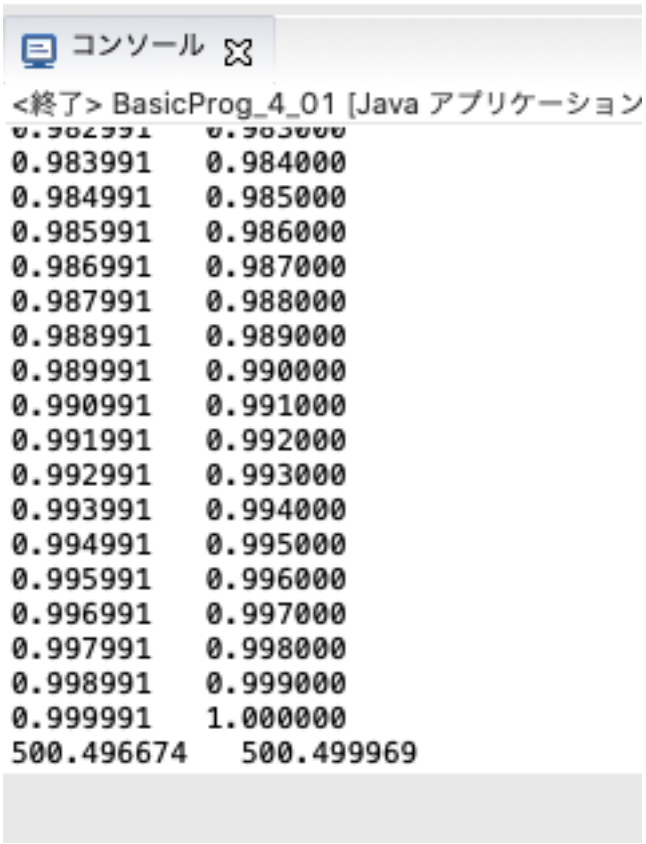
演習１

ソースコード

```
public class BasicProg_4_01 {

	public static void main(String[] args) {
		float sum = 0.0F;

		for(float x = 0.0f; x <= 1.0F; x += 0.001F) {
			System.out.println("x =" + x);
			sum += x;
		}

		System.out.println("sum =" + sum);

		float summy = 0.0F;

		for(int i =0; i <= 1000; i++) {
			double y = (float) i/(1000.0);
			System.out.println("y =" + y);
			summy += y;
		}

		System.out.println("sum =" + summy);

		for (float x = 0.0f, y = 0.0f; x <= 1.0F; x +=
0.001F, y++) {
			double y2 = (float) y / 1000.0;
			System.out.printf("%.6f   %.6f¥n", x, y2);

		}

		System.out.printf("%.6f   %.6f", sum, summy);
```

```
        }

}
```

実行結果

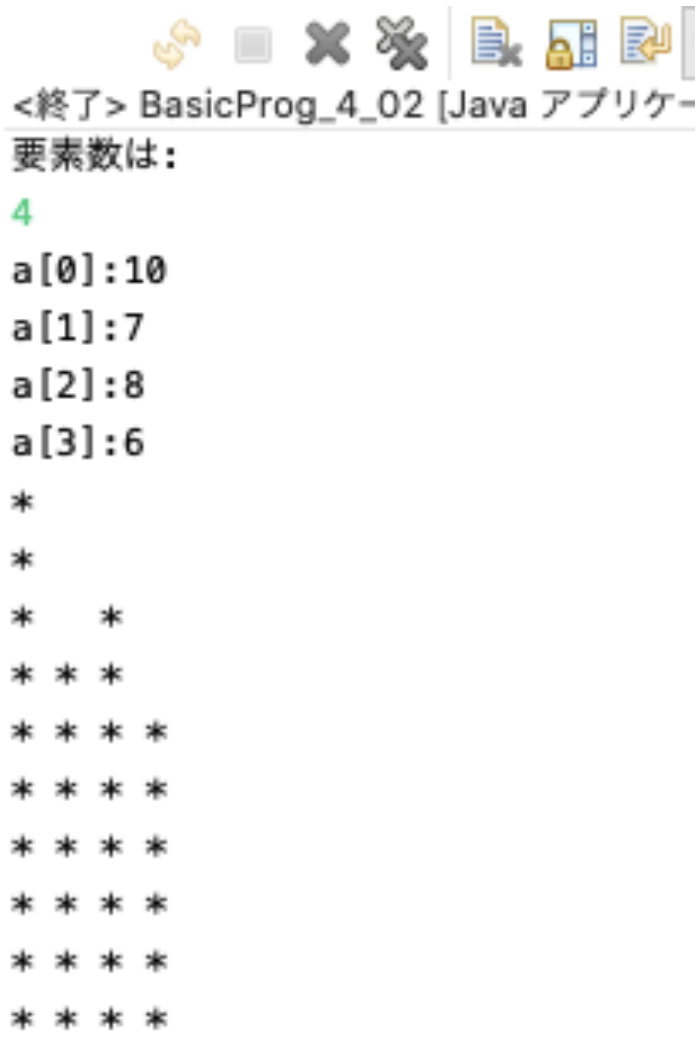

コンソール
<終了> BasicProg_4_01 [Java アプリケーション
0.983991   0.984000
0.984991   0.985000
0.985991   0.986000
0.986991   0.987000
0.987991   0.988000
0.988991   0.989000
0.989991   0.990000
0.990991   0.991000
0.991991   0.992000
0.992991   0.993000
0.993991   0.994000
0.994991   0.995000
0.995991   0.996000
0.996991   0.997000
0.997991   0.998000
0.998991   0.999000
0.999991   1.000000
500.496674   500.499969

演習２
ソースコード

```
import java.util.Random;
import java.util.Scanner;
public class BasicProg_4_02 {

	public static void main(String[] args) {
		Random rand = new Random();
	   Scanner stdIn = new Scanner(System.in);



	   System.out.println("要素数は:");
	   int n = stdIn.nextInt();

	   int[] a = new int[n];
	   for(int i=0; i < n; i++) {
	      a[i] = 1 + rand.nextInt(10);
	      System.out.println("a[" +i+ "]:" +a[i]);
	   }

	   for(int j=10; j >= 1; j--) {
	      for(int i=0; i < n; i++) {
			if(a[i] >= j)
				System.out.print('*');
			else
				System.out.print(' ');
			System.out.print(' ');

		}
	      System.out.println();
	   }


	}
```

```
}
```

実行結果



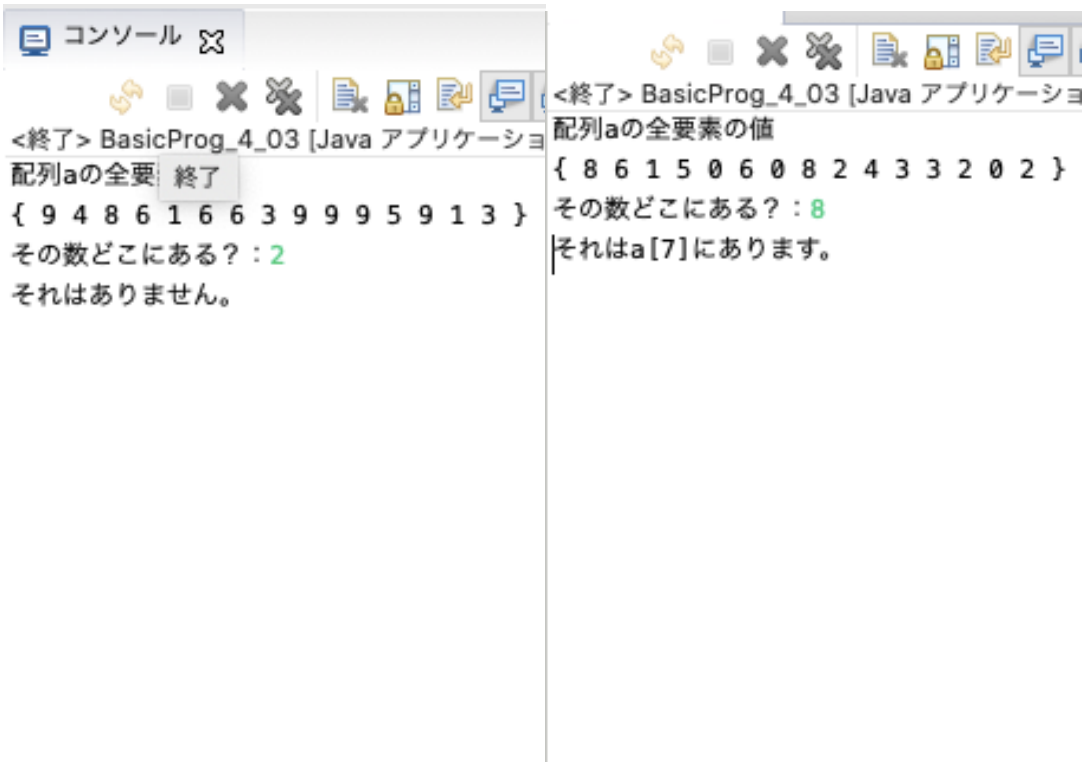
演習３

ソースコード

```
import java.util.Random;
import java.util.Scanner;
public class BasicProg_4_03 {

	public static void main(String[] args) {
		Random rand = new Random();
		Scanner stdIn = new Scanner(System.in);

		final int n = 15;
		int[] a = new int[n];

		for (int j = 0; j < n; j++) {
			a[j] = rand.nextInt(10);
		}

		System.out.print("配列aの全要素の値¥n{ ");
		for (int j = 0; j < n; j++) {
			System.out.print(a[j] + " ");
		}
		System.out.println("}");

		System.out.print("その数どこにある？：");
		int key = stdIn.nextInt();

		int i;
		for (i = n - 1; i >= 0; i--) {
			if (a[i] == key) {
				break;
			}
		}

		if (i >= 0) {
			System.out.println("それはa[" + i + "]にありま
す。");
```

```
            } else {
                  System.out.println("それはありません。");
            }

      }

}
```

実行結果



演習４

ソースコード

```
import java.util.Scanner;
public class BasicProg_4_04 {

	public static void main(String[] args) {
		Scanner stdIn = new Scanner(System.in);

		int[][] a = new int[4][3];
		int[][] b = new int[3][4];
		int[][] c = new int[4][4];

		for (int i = 0; i < 4; i++) {
			for (int j = 0; j < 3; j++) {
				System.out.printf("a[%d][%d]:", i, j);
				a[i][j] = stdIn.nextInt();
			}
		}

		for (int i = 0; i < 3; i++) {
			for (int j = 0; j < 4; j++) {
				System.out.printf("b[%d][%d]:", i, j);
				b[i][j] = stdIn.nextInt();
			}
		}

		for (int i = 0; i < 4; i++) {
			for (int j = 0; j < 4; j++) {
				for (int k = 0; k < 3; k++) {
					c[i][j] += a[i][k] * b[k][j];
				}
			}
		}

		System.out.println("行列a");
		for (int i = 0; i < 4; i++) {
```

```
                for (int j = 0; j < 3; j++) {
                        System.out.printf("%3d", a[i][j]);
                }
                System.out.println();
        }

        System.out.println("行列c");
        for (int i = 0; i < 3; i++) {
                for (int j = 0; j < 4; j++) {
                        System.out.printf("%3d", b[i][j]);
                }
                System.out.println();
        }

        System.out.println("行列c");
        for (int i = 0; i < 4; i++) {
                for (int j = 0; j < 4; j++) {
                        System.out.printf("%3d", c[i][j]);
                }
                System.out.println();
        }
    }
}
```

実行結果（次ページ）

```
a[0][0]:3
a[0][1]:1
a[0][2]:2
a[1][0]:3
a[1][1]:4
a[1][2]:5
a[2][0]:6
a[2][1]:4
a[2][2]:2
a[3][0]:3
a[3][1]:6
a[3][2]:7
b[0][0]:5
b[0][1]:8
b[0][2]:5
b[0][3]:7
b[1][0]:3
b[1][1]:5
b[1][2]:7
b[1][3]:4
b[2][0]:2
b[2][1]:3
b[2][2]:5
b[2][3]:7
行列a
  3  1  2
  3  4  5
  6  4  2
  3  6  7
行列c
  5  8  5  7
  3  5  7  4
  2  3  5  7
行列c
 22 35 32 39
 37 59 68 72
 46 74 68 72
 47 75 92 94
```